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TANK VESSELS

Structural Fire Protection Requirements

Title 46—Shipping

CHAPTER I—COAST GUARD, DEPARTMENT OF TRANSPORTATION

[CGD 74–127]

TANK VESSELS

Structural Fire Protection Requirements

● Purpose. The purpose of these amendments to the rules and regulations for tank vessels is to add regulations that incorporate the substance of IMCO Resolution A. 271 (VIII), "Draft Regulations Concerning Fire Safety Measures for Tankers and Combination Carriers", which was adopted by the Assembly of the Inter-Governmental Maritime Consultative Organization on November 20, 1973. ●

These amendments upgrade the structural fire protection requirements for certain tankships, require inerting systems for tankships above specified sizes, and require an increase in the capability of the foam systems of tankships.

A notice of proposed rulemaking, CGD 74–127, was published in the FEDERAL REGISTER of Monday, April 21, 1975, (40 FR 17592). Twenty-six comments received from 22 individuals during and within one month after the comment period are considered in this document. One comment on the advance notice of proposed rulemaking of September 5, 1974, (39 FR 32147) is also considered.

APPLICATION DATE

Eight commenters objected to application of these amendments to all tankships with a keel laying date on or after January 1, 1975. Several of these commenters urged the use of a contract date that is after the date of promulgation of the regulations. Others urged use of a keel laying date after promulgation. One suggested that the proposed keel laying date be used only for the inert gas regulations or even that those regulations be extended to apply to all U.S. tankships within the size limitations specified by the regulations and to all foreign flag tankships within the specified size limitations that enter U.S. ports. The commenter was concerned that use of the proposed keel laying date for the application of the remaining regulations would disrupt the series production methods that have made U.S. shipyards competitive with foreign shipyards.

The Coast Guard acknowledges that regulations based upon keel laying on or after January 1, 1975, do not provide as much planning flexibility as those based upon a contract date; however, most U.S. tankships of the specified size that are to be in use for the next 20 years would probably be excluded if these regulations were based upon contract date. There are a large number of tankships under contract, but few if any new contracts being signed. Furthermore, there may never again be a massive tankship building program such as now exists because of the national effort to reduce foreign oil imports and the decreasing amount of oil left to import. Therefore, the Coast Guard is applying the keel laying date concept recommended under Inter-Governmental Maritime Consultative Organization (IMCO) Resolution A.271 (VIII) which is that the regulations should apply to tankships "the keels of which are laid or which are at a similar stage of construction" after a specified date. This resolution was developed with U.S. marine industry participation. IMCO Resolution A.271(VIII) recommended that the regulations be applied to tankships that have their keels laid after June 30, 1974. Because the Coast Guard was unable to give the public notice of the proposed rulemaking until September 5, 1974, implementation was delayed until the January 1, 1975, date. Furthermore, these amendments only adopt, with minor exceptions, the substance of the IMCO resolution. Major deviations from the resolution, such as application of the inert gas regulations to all U.S. tankships of the specified size and to all foreign tankships of the specified size that enter U.S. ports, are being studied by the Coast Guard. The Coast Guard does not intend to make any of these deviations without ample opportunity for public participation.

DIFFERENCES BETWEEN IMCO AND COAST GUARD REQUIREMENTS

Two commenters stated that the proposed regulations were sometimes more stringent than the IMCO recommendations. The Coast Guard attempted to avoid differences, but it was necessary to correct inconsistencies within the IMCO resolution and between the resolution and other documents and to clarify vague requirements.

For example, the construction and arrangement of liquefied gas vessels are covered by the IMCO "gas code" as well as the Coast Guard "Tank Vessel Regulations". There are a few differences between this "gas code" and IMCO resolution A.271(VIII), but the Coast Guard regulations in this document have attempted to resolve any potential conflicts before they develop. IMCO Resolution A.271(VIII) requires that portlights facing cargo tanks have steel covers only on the first tier on the main deck. The "gas code" requires steel covers on all levels. Most fires large enough to expose the first tier will also radiate heat through portlights on upper decks. Because the Coast Guard considers these requirements of IMCO Resolution A.271(VIII) inadequate and inconsistent with the IMCO "gas code", the regulations in this amendment resolve the discrepancy by requiring steel covers at all levels except the wheelhouse. Other nations have taken similar action.

Similarly, the IMCO resolution's prohibition against doors on the first deck in way of the cargo area has been expanded in these regulations to include the entire housefront.

RENOVATIONS

One commenter asked about the applicability of the regulations to vessels undergoing major overhaul or conversion. 46 CFR 30.01–10, which does apply to the vessels addressed by these amendments, requires that work upon tank vessels undergoing major alterations or repairs must meet the requirements for new construction if possible. Each case is considered on its own merits. Although it may not be practical and feasible to meet certain structural fire protection requirements, inert gas systems can almost always be added.

INTEGRATED TUG-BARGES

One person responding to the notice of proposed rulemaking suggested that rules for integrated tug-barge systems should be addressed in these rules and asked if integrated tug-barge systems would be considered under these regulations as tankships or tank barges. This comment is not relative to the proposed rulemaking. Integrated tug-barge systems that carry liquid bulk cargo have some characteristics of tankships and some characteristics of tank barges. Therefore, they cannot be categorized as either.

LIQUEFIED GAS CARRIERS

Two commenters requested clarification of the application of these regulations to liquefied gas carriers. Since complete regulations for liquefied gas carriers are not yet ready for publication, the major exceptions are addressed in these regulations instead of publishing a separate interpretative ruling as was stated in the notice of proposed rulemaking.

DEFINITIONS

One commenter stated that the definitions in the notice of proposed rulemaking have altered his interpretation of the requirements in the advance notice which he had already begun to apply. These definitions were taken from IMCO and Coast Guard regulations and the Coast Guard believes that they are representative of traditional interpretations of the terms.

Section 30.10–6a. Clarification was requested as to whether a space containing a gas turbine prime mover is considered a Category A machinery space. Category A machinery spaces include spaces that contain certain internal combustion machinery. Gas turbines are categorized as "internal combustion machinery" under 46 CFR Subpart 58.10. Therefore, any gas turbine that fits one of the descriptions in paragraphs (a), (b), or (c) of § 30.10–6a is included within this definition of Category A machinery space.

Section 30.10–16b. This section has been renumbered § 30.10–14.

Section 30.10–19a. One commenter suggested that the definition of control station be modified by adding "this does not include special control equipment which can be most practically located in the cargo area". The intent of the definition is to include only certain listed equipment including centralized fire control equipment. Individual items of fire control equipment are not included. Therefore, fire hose stations, foam monitors, dry chemical stations, and similar fire fighting equipment are not considered to be control stations. Accordingly, the definitions has been modified by changing "control stations" to "control space" and by stating exceptions.

Section 30.10–20. One comment was that the definition of deadweight be

based upon assigned summer freeboard rather than upon the minimum permissible summer freeboard because many vessels are assigned a freeboard in excess of the minimum permitted under the Load Line Convention. This is especially true of liquified gas carriers where the specific gravity of the cargo is low. The definition has been revised to remove this discrepancy. Also, the term "metric" has been inserted to avoid confusion whenever deadweight is used in the regulations.

Section 30.10–37. A definition of keel laying date has been added to resolve confusion over the meaning of "keel laying date or similar stage of construction" as used in the proposed regulations. The keel laying has traditionally designated the start of construction of a vessel. Modern construction techniques have led to the fabrication of sections of a vessel before the official or actual laying of the keel. Since the term "keel laying date" is intended to mean the actual start of irreversible work on a particular vessel, prefabrication or other significant construction could be equivalent to keel laying for regulatory purposes. The work must be part of the regular, continuous construction, using normal shipyard work schedules, of a particular vessel. Therefore, components that are purchased or fabricated but are not assembled into a part of the hull cannot be considered in determining the keel laying date. As an example, prefabrication of standard web frames or bulkhead sections would not be accepted as a stage of construction similar to keel laying; however, the date when assembly of these standard sections into the first module of a particular hull began would be accepted as the keel laying date. If there is any question as to the keel laying date for regulatory purposes, the records of the Coast Guard marine safety personnel will usually be used to determine the date upon which tangible evidence of construction of a particular hull began. The term "or which are at a similar stage of construction" which appeared in several of the proposed regulations has been deleted since it is covered by the definition of keel laying.

Inert Gas System

Twelve comments concerning the inert gas system requirements, including one comment received after the advance notice of proposed rulemaking, but before the notice of proposed rulemaking, were received and considered by the Coast Guard.

Section 32.53–1. Several persons recommended that the inert gas regulations be applied to other categories of vessels. Some of the alternatives suggested were that all inert gas systems installed on all vessels after the application date be required to meet the proposed regulations, that the regulations be made retroactive for all tank vessels, that the cut-off for application to tankships be reduced to 70,000 or even 20,000 deadweight tons, that the cut-off be based upon something other than deadweight, that foreign tankships in U.S. waters be included, and that the regulations be extended to tankships undergoing conversions. All of the suggestions have some merit and are being considered. The optimum size limits for application of the regulations are being studied by the Coast Guard. Additionally, other criteria such as tank size, static electricity control, and tank cleaning equipment are being evaluated to determine if they would provide a better criteria than deadweight for determinnig the need for an inert gas system. It must be remembered that these regulations could be applied on such short notice only because of the publicity within the marine industry caused by the IMCO resolution and the advance notice of proposed rulemaking for these regulations. It is not reasonable to apply the regulations to additional vessels without considerable advance notice to and participation in the rulemaking process by interested persons. If the Coast Guard determines that retroactive application of the inert gas regulations to other sizes and types of vessels is necessary and can be justified from an environmental, economic, and a safety viewpoint, separate action would be taken which allows time for purchase and installation of the systems without undue disruption of marine transportation.

One person believed that application of the inert gas regulations to other types of tank vessels was necessary because it would "essentially eliminate the explosion problems for all tankers." Inerting of cargo tanks has the potential of reducing cargo tank explosions but it cannot eliminate them. Furthermore, inerting of cargo tanks cannot prevent explosions or fires in other parts of tankships which are as numerous as those in cargo tanks. The Coast Guard is acting to reduce these other fires and explosions through extensive research and development programs, testing and internal studies, and further regulatory actions. The following are examples of these actions. The requirement in these regulations for locating accommodation, service, and control spaces aft of the cargo area reduces the probabiilty of explosions in these spaces, The requirement for limiting openings in the housefront should reduce the chance of explosive vapors reaching an ignition source within the house. Explosion suppression systems are being tested. Venting requirements are being evaluated under a research contract.

One commenter wanted "a complete revision and reissue of the proposed rules" on inert gas systems so that an environmental impact statement could be written and so that the regulations could be applied to a far broader range of vessels. The Coast Guard did an environmental assessment on the proposed regulations and filed a Negative Declaration stating that the action would not have a significant impact upon the environment of the United States (39 FR 17593). The Coast Guard believes that a complete revision and reissuance of the regulations to include additional vessels as well as development of an environmental impact statement based upon revised regulations could cause a delay of several years for the implementation of the regulations. This delay is not acceptable for the reasons stated in this preamble in response to comments on the application date of these regulations.

One commenter suggested that inert gas systems not be required for tank ships carrying grades D and E cargoes because IMCO Resolution A.271 is limited to cargoes with a closed-cap flash point not exceeding 60°C (140°F). The Coast Guard regulations define Grade D as any combustible liquid having a flashpoint below 150°F and above 80°F and Grade E as any combustible liquid having a flashpoint of 150°F or above. However, the Coast Guard uses an open-cup tester. The equivalent to 150°F in an open-cup tester is approximately 140°F in a closed cup tester. Based on these figures, it can be seen that the IMCO resolution excludes Grade E but not Grade D cargoes. Since Grade E cargoes are not normally carried in a dangerous condition, they have also been excluded from the Coast Guard regulations unless they are heated.

One person questioned the application of the inert gas requirements to liquefied gas carriers. Since these vessels have other means of preventing cargo tank explosions, the inert gas provisions in these regulations have been changed to exclude liquefied gas carriers. Rules for liquefied gas carriers are to be considered in a subsequent rulemaking.

Section 32.53–5. Three persons commented that the inert gas system need not be operated continuously to maintain an inert atmosphere within the tanks as the proposed regulation implied. Instead, the tanks can be pressurized with inert gas and in some cases the atmosphere may be maintained for several hours without the need for additional inert gas. In consideration of these comments, the section has been rewritten to clarify the intent to operate the system as is necessary to insure that an inert atmosphere is maintained.

Section 32.53–10(a). The requirements concerning vessel size which were formerly in § 32.53—10(a) have been moved to § 32.53–1.

Section 32.53–10(c). One comment suggested that the need for fresh air during gas freeing was not properly addressed in this section. The section has been reworded accordingly.

Section 32.53–10(d). One comment questioned the extent and type of tanks that must be connected to the inert gas system for purging. The section has been rewritten to clearly state that only cargo tanks and cargo slop tanks are included.

A clarification of the term "purged" was also requested. "Purge" is commonly understood to mean the effective removal of undesirable vapors. Before gas freeing an empty cargo tank, it must be purged by continually adding inert gas and allowing a mixture of inert gas and hydrocarbon vapors to be vented. When the amount of hydrocarbon vapors has been sufficiently reduced to prevent an explosive mixture, the tank is purged

with fresh air. A combination of air and insert gas is discharged to the atmosphere until the air within the tank is safe for entry by personnel. Similarly, the air in a gas free tank must be purged with inert gas before loading cargo into the tank. With proper purging, cargo tanks can be gas freed and later loaded without ever having an explosive mixture within the tanks. No change to the regulation is necessary to describe this procedure.

Section 32.53–10(f). Several people questioned the intent of the requirement concerning generation of static electricity and asked what would be acceptable. One person asked that the paragraph be deleted. The requirement is included because inert gas systems can generate static electricity and static electricity can cause ignition of cargo vapors. For example, nonconductive piping could allow static charge to accumulate so that a static discharge could take place. Static eliminations are not the only means of meeting this requirement. The state of the art should be explored before designing each system.

Section 32.53–15. One commenter asked what standard would be used for mechanical design. A paragraph has been added stating that the Marine Engineering Regulations in 46 CFR, Subchapter F apply. Because of corrosion problems encountered with inerting systems, materials other than those in 46 CFR 56.60 may be allowed as equivalent if it can be shown under 46 CFR 30.15–1 that they are more suitable for the intended use and that they provide a degree of safety equal to that of the materials required by 46 CFR 56.50. Mandatory pressure testing of the gas distribution system is limited to an initial service leak test.

Section 32.53–25. Several people suggested that the wording requiring that inert gas system be "designed to continuously supply" inert gas implies that the system must operate at full capacity at all times. The intent is to design a system capable of injecting inert gas into the tanks at a rate that is sufficient to prevent the development of a flammable atmosphere within the tank with a 25 percent safety factor. It is not necessary to operate the system at full capacity at all times to do this. The comment was also made that normal transfer operations might not include the use of all pumps at one time. In light of these comments, the section has been revised to say that the inert gas system must be "capable" of providing inert gas at a capacity of 125 percent of the combined maximum capacities of the cargo pumps that "can" be operated simultaneously.

Section 32.53–30. One commenter questioned the need to design the inert gas system to maintain a positive pressure on the tanks because this implies an automatic process. Manually operated systems are permitted by the regulations. Safeguards are required by § 32.53–70(b)(2) to ensure that the operators are warned of low inert gas pressure. The section has been rewritten to clarify this.

It was also stated that the system should be able to maintain a positive pressure during unloading as well as loading. The integrity of the inert atmosphere is not guaranteed unless a positive pressure is also maintained during unloading. The section has been rewritten accordingly.

Section 32.53–35. Two people stated that this section could be interpreted to require removal of all solid and sulphur combustion products from the inert gas. Another believed that the requirement was not adequate because "corrosion is a significant factor contributing to structural failures of oil carrying vessels" and that inert gas quality should therefore be closely regulated. The intent of the regulation is to provide a means for limiting extreme corrosion, blockage, or deposits within the piping and tanks. The extent of removal is being left to the vessel owners and operators who are responsible for maintenance. Certainly, corrosion left unchecked can lead to structural problems. The Coast Guard makes periodic inspections of the condition of U.S. flag vessels and requires renewal of structural members or plates that are unsafe because of corrosion. Corrosion therefore becomes a long term maintenance cost item rather than a safety item. The section has been changed to clarify that total removal of solids and sulphur combustion products is not required.

Section 32.53–45(b). It was suggested that use of blowers is not the only means of designing an inert gas system to prevent excessive pressure on the tanks. The section has been rewritten accordingly.

Section 32.53–50(a). A commenter asked if a device that is equivalent to a water seal could be used instead of the water seal required by this section. Section 30.15–1 of Subchapter D allows the use of equivalent equipment if it is as effective and as safe as the required equipment.

Clarification of the term "shut-down" valve was also requested. The requirement for a shut-down valve is clarified by § 32.53–75.

Section 32.53–50(b). One commenter stated that this section implied that an automatic water level control was necessary. The alarm required by § 32.53–70(a)(2) gives warning if the water supply to the water seal is lost, so this section has been rewritten to clarify that manual control is allowed.

Section 32.53–55. Several commenters questioned the requirement for stop valves at each tank suggesting that a hazardous situation could be created by opening or closing the valves at the wrong time. They recommended various flanges as an alternative. The section has therefore been changed to allow spectacle flanges and to require that each closure device be a type which can be visibly determined to be open or closed.

Section 32.53–60. Several persons asked questions about the location of the inert gas monitoring instruments and their sensors. Four commenters stated that inert gas systems are frequently controlled and monitored from the engine room when cargo transfer operations are not taking place and that instruments would also be necessary there. The section has been rewritten to clearly describe the location of the instrumentation and to include a requirement for readouts within the engine room.

One commenter suggested a high temperature alarm in place of a temperature indicator. The Coast Guard believes that it is beneficial to have the temperature readings available so that trends can be observed and therefore the requirement for a temperature indicator rather than a high temperature alarm remains unchanged.

Section 32.53–65. The question of the background atmosphere in which the portable instruments must operate was raised by two people who stated that most hydrocarbon measuring instruments are not operable in an inert atmosphere. Accordingly, the section has been rewritten to state that the portable instruments must be operable in an inert atmosphere.

One person suggested that the percentage limits of the oxygen and hydrocarbon measuring instruments be defined. No specification has been promulgated for the measuring instruments; however, the instruments may be inspected by the Coast Guard to determine that they are operable, accurate, and suitable for the intended use, and that the operators are familiar with their use.

Section 32.53–70(b). Clarification was requested of the types of pressures to be measured, of the location of sensors, and if measuring of water flow rather than pressure would be suitable. The type of pressure, gas or water, and the location of the gas sensors has been clarified. Also, the requirement for measuring water pressure has been revised to allow alternate measurement of water supply availability.

Section 32.53–70(b)(1). Several people recommended that the oxygen alarm operate when the oxygen content of the inert gas reaches 8% instead of 6% to be in conformance with the American Bureau of Shipping guide. Neither concentration will support combustion. Therefore, in the interest of uniformity, the regulation has been changed to allow the alarm to be set for an oxygen concentration of up to 8%.

Section 32.53–70(b)(3). Shutting down the blowers upon loss of water pressure to the water seal was questioned. A commenter stated that this could lead to a backflow and that a simple alarm would be better. Since shutting down of the blowers causes operation of the automatic shut down valve required by § 32.53–75, backflow is prevented and no change is necessary to the regulation.

Section 32.53–70(b)(4). Several commenters believe that a temperature alarm that responds to a differential temperature would be unnecessarily complicated and difficult to maintain. The use of a 150°F maximum temperature was suggested instead. A differential temperature above ambient seawater temperature was used because inert gas

scrubbers are normally cooled by seawater which varies in temperature. The use of a fixed maximum temperature could allow the inert gas to contain more water vapor and therefore condensation and corrosion in the pipeline and tanks would be increased. The Coast Guard has decided to accept a temperature limit of 150°F because fixed temperature devices are more reliable than differential temperature devices. The safety of the system would still be acceptable because replacement of components of the system is required if the Coast Guard during a regular inspection determines that these components are excessively corroded.

Section 32.53–70(b)(5). One person suggested that the loss of cooling water alarm and shut-down could be deleted because the high temperature shut-down would be sufficient. Although the high temperature controls would eventually shut down the inert gas system, a time lag can be expected during which hazardous conditions may develop. Therefore, the cooling water controls are required as proposed.

Section 32.53–80. The need for this section was questioned by a commenter since conventional tank cleaning systems work in an inert atmosphere. The Coast Guard believes that this section is necessary to prevent use of tank washing equipment that requires opening of the tanks and possible release of inert gas.

One person stated that this section could be interpreted to require that an inert atmosphere be maintained while men are manually cleaning the tanks. The section has been reworded to clarify that only mechanical tank washing equipment is intended.

STRUCTURAL FIRE PROTECTION

Section 32.56–5. One commenter believed there is a conflict between § 32.56–5(b)(3), which requires that certain spaces be located aft of cofferdams separating the cargo area from Category A machinery spaces, and §§ 32.56–5(a) and 32.56–5(d), which do not mention cofferdams. These sections were numbered §§ 32.56–5(b)(3), 32.56–5(a)(1), and 32.56–5(b) in the notice of proposed rulemaking. The Coast Guard believes that this is not an inconsistency. Category A machinery spaces are required by § 32.60–10(a) to be separated from cargo tanks by cofferdams or other spaces. Therefore, it is not necessary to put this requirement in these regulations. Also, since § 32.56–5(d) of these regulations requires that spaces located forward must have the same degree of fire safety as spaces located aft, it is unnecessary to repeat the requirement for cofferdams.

One commenter asked if the term "slop tank" included double bottoms. The term "slop tank" is no longer used in this section since a term "cargo area" has been added to the definitions as § 30.10–5a. "Cargo area" includes cargo slop tanks, cargo tanks, dirty ballast tanks, similar tanks that are intended to contain liquid cargo or cargo vapors, and spaces within, between, below, or outboard of these tanks. Double bottoms are not included in the "cargo area" unless they fall within this definition.

One person stated that the forward bulkhead of the accommodations is often located at the same frame as the after bulkhead of the pump room and asked if this is considered aft of the pump room. In that situation, the accommodations are located aft of the pump room; however, in a similar situation at the after bulkhead of a cargo tank, § 32.60–10(a) requires segregation of accommodation spaces and cargo tanks by a cofferdam or other space.

Two commenters suggested that the expression "cargo pump rooms" in §§ 32.56–5 (b)(2), (a)(2) in the notice, be changed to "cargo pump room access" to allow recessing of the lower level of the pump room into the machinery space. IMCO Resolution A.271 allows recessing of the lower level of the pump room into a Category A machinery space if the deck head of the recess is not more than one-third of the moulded depth above the keel. However, the IMCO Resolution also requires that the accommodation, service, and control spaces be aft of the cargo pump room, implying that these spaces should also be aft of any recess. Requiring the accommodations to be aft of the cargo pump room access does not satisfy this IMCO requirement. Because of the confusion caused by these conflicting rules, the Coast Guard is undertaking a study of damage caused by pump room explosions. Meanwhile, U.S. flag ships may be built with pump rooms recessed into the machinery space. Also, accommodations need not be aft of this recess if there is a substantial space between the deckhead of the recess and the underside of the accommodations. Accordingly, § 32.56–5 has been changed by adding a paragraph (c) that allows the pumproom to be recessed into the machinery space, and to allow a pump room recess to extend below the house if there is a buffer space at least equal to the height of the recess. This space may be a void, a machinery space, or other space not specifically prohibited.

One commenter noted that the proposed Coast Guard regulation changes in paragraph (a)(ii), which is now paragraph (b)(3), of § 32.56–5 require that the accommodation, service, and control spaces be located aft of "cofferdams that isolate cargo or slop tanks from machinery spaces of Category A," but that the IMCO "gas code" does not prohibit this arrangement. Since cofferdams adjacent to cargo tanks of conventional tankships may contain explosive vapors, these cofferdams should not be located under the house. However, the requirements for liquefied gas carriers are different from the requirements for conventional tankships because of the nature of the cargo. In a liquefied gas carrier the cargo is normally separated from the cofferdam space by two boundaries. Therefore, liquid cargo does not come in contact with the cofferdam bulkhead and there is less probability of a cofferdam explosion. An exception has been added to this regulation to exclude most liquefied gas carriers.

It was asked if main cargo control stations are prohibited in the cargo area of liquefied gas carriers under § 32.56–5(b), paragraph (a)(2) of the notice. Since liquefied gas carriers are often arranged so that not all of the cargo area is visible from the house, it is sometimes beneficial to locate the cargo control room in the cargo area where operations can be more easily observed. Liquefied gas carriers are also required to have automatic controls and protection systems not required on other tank ships. Therefore, an exception has been added to § 32.56–5(b) because there can be an equivalent degree of safety if the main cargo control station, often called a cargo control room on liquefied gas carriers, is located in the cargo area.

Section 32.56–15. One commenter was pleased with the requirements for deck coamings; however, the coamings are not to prevent overboard spills as the commenter had believed. They are intended to prevent cargo spills from flowing back to the accommodations and service areas where ignition could endanger personnel or prevent access to the Lifeboat embarkation areas. Coamings or drip pans are already required by 33 CFR 155.310 around manifold areas for preventing spills. The performance of currently approved arrangements is being monitored by the Coast Guard to determine if there is justification for a second spill barrier.

One commenter asked what the height of the protective barrier required by § 32.56–15 must be. The barrier is intended to protect against cargo spills and may vary in height depending upon factors such as the slope of the deck, the proximity of piping which could rupture, the presence of other coamings, and the pumping capacity. The exact height cannot be defined in advance because of these variables. Generally, a one foot coaming is acceptable unless the vessel is arranged so that cargo could flow over that barrier. The barrier is not intended to protect against other hazards such as radiant heat, so the section has been modified to clarify that protection against cargo spills is intended.

Section 32.56–20. One person suggested that the requirement for A–60 Class insulation at the housefront be limited to overhanging decks. Although the IMCO Resolution specifically singles out overhanging decks, it includes all exterior boundaries. The Coast Guard interprets this to include all decks except the top of the wheelhouse.

Section 32.56–21. This was § 32.56–20 (b) of the notice of proposed rulemaking. A commenter requested clarification of the extent of protection required for openings in the superstructure and deckhouses that face or are near the cargo area and that contain accommodation, service, or control spaces. This section differs from the IMCO Resolution which requires protection of openings for 5 meters along the sides of the house. The Coast Guard believes that prohibition of openings for 5 meters would be impracticable for small ships. Therefore, the distance in meters to be protected on vessels less than 125 meters in length

is the length of the vessel divided by 25 or 3 meters, whichever is greater. The 5 meter distance applies on vessels of 125 meters or more in length. This is in conformance with the IMCO "gas code." For example, doors that open into accommodation, service, or control spaces on a conventional tankship that is 125 or more meters in length may not be located on the housefront or within 5 meters, measured from that front, along the sides of the house. If doors within this area are fitted to spaces other than accommodation, service, or control spaces, the interior of these spaces must have A–60 Class insulation and may not have openings that give access to accommodation, service, or control spaces. All glazing must be fixed and steel covers must be installed in this area. The covers for normal portlights and similar windows may be manually closed during a fire. The wheelhouse may be excluded from these requirements, but exterior openings to the wheelhouse of liquified gas ships must be arranged to permit rapid gas-tight closure, either automatic or manual.

Section 32.56–21 should not be confused with § 32.56–20. Although A–60 Class insulation is required for 3 meters along the sides of the house in all cases, openings along the sides of the house are restricted for at least 3 meters and often up to 5 meters.

One commenter objected to the requirement for fixed portlights because it "may be misconstrued to imply that windows in the house front are not permitted" and because the IMCO document did not prohibit windows. The intent of the IMCO recommendation is to prevent heat, flame, and gases from entering the house. Other windows have not been included in these regulations, but they may be allowed as equivalents under 46 CFR 30.15–1 if they provide protection that is at least equal to that provided by traditional portlights which are designed in accordance with these regulations. If these windows differ substantially in size or construction from traditional portlights, special precautions such as insulation and automatic operation of covers may be necessary if these windows are to be allowed by the Coast Guard as an equivalent protective barrier.

One commenter suggested "fire resistant glass" as an alternative to steel covers for protecting openings in the housefront. The Coast Guard is unaware of any fire resistant glass that provides equivalent protection. Even wired glass, which can withstand a standard fire test without melting or breaking, transmits heat by radiation and therefore is not acceptable.

Section 32.56–30(c). A commenter requested a determination of the degree of insulation required for separation of control stations from adjacent spaces. The amount of fire insulation is determined by the nature of the adjacent space. Specific rules have not been promulgated by IMCO. As an interim measure the insulation values in table 72.05–10(e) of the Passenger Vessel Regulations must be used as a guideline. Section 32.56–30(c) was improperly located in the notice of proposed rulemaking and has been renumbered as § 32.56–55.

Section 32.56–40. One commenter asked the meaning of "impervious" as applied to the surface of insulation in Category A machinery spaces. This means a permanent barrier, such as a metal foil, sheet metal, cementitious coating, or a vapor barrier. The barrier must be continuous or provision must be made for closing all discontinuities. An editorial change has been made to clarify that the impervious barrier is only required for structural insulation.

Section 32.56–50. One comment stated that there is a conflict between paragraph (a) of this section which restricts combustible veneers to a 2 millimeter (.079 inch) thickness and existing paragraph (d)(9) of § 32.57–10 which restricts them to a 2/28 (.0714 inch) thickness. Subparagraph (d)(9) of § 32.57–10 has been revised to remove this conflict.

Section 32.56–60. Several comments were received on the requirements for insulation of ventilation ducts in § 32.55–50 of the notice. The IMCO Resolution requires that Category A machinery space ventilation ducts passing through accommodations and similar spaces be A–60 Class or have fire dampers; however, the resolution also requires that ducts for ventilation of accommodations, service, or control spaces passing through Category A machinery spaces must have fire dampers at the boundaries. Furthermore, the IMCO resolution requires the separation of Category A machinery spaces from accommodation and service spaces by A–60 Class construction. The proposed A–60 requirement in § 32.55–50 was thought to satisfy all of these provisions. After further examination, the Coast Guard believes that A–60 Class insulation and fire dampers do not always provide equivalent protection and that failure to include dampers in the regulation unnecessarily reduces flexibility. The section has been changed accordingly.

FIREFIGHTING REQUIREMENTS

Section 34.20–10(e). One person requested a discussion of the requirement that deck foam systems be operational within three minutes. Although "simple and rapid operation" as recommended by the IMCO Resolution are good general goals, the Coast Guard believes that a specific time limit is necessary to avoid misunderstandings. Three minutes is used because it is usually considered to be a reasonable goal of fire departments, fire brigades, and similar firefighting activities. Foam system manufacturers can provide this capability with available equipment. The three minute time only applies to the process of placing the system into service, which includes opening all valves, starting the pump, turning on the foam proportioner, and all other steps before actual discharge of the foam. Since it may not be feasible to meet this goal with some existing systems, the regulation has been reworded to limit application to vessels with a keel laying date on or after January 1, 1975.

Section 34.20–15(g). Two commenters recommended that the foam stations required by this section be located at the housefront, but not necessarily aft of the cargo tanks and pumproom. The intent is to locate the monitors in an area that is always accessible during a fire in the monitors over the cargo area or pumproom is not acceptable. Furthermore, the cargo area or pumproom, so locating the monitors must be aft of the coaming which protects the accommodations area from cargo spills because they may not be accessible forward of that coaming. The wording has been changed to clarify the proper foam station location.

In consideration of the foregoing, Parts 30, 32, and 34 of Title 46, Code of Federal Regulations, are amended as follows:

PART 30—GENERAL PROVISIONS

1. Subpart 30.10 is amended by adding the following new sections:

Subpart 30.10 Definitions

Sec.

30.10–2 Accommodation space—TB/ALL.
30.10–5a Cargo area—TB/ALL.
30.10–5b Cargo control station—TB/ALL.
30.10–6a Category A machinery space—TB/ALL.
30.10–14 Combination carrier—TB/ALL.
30.10–19a Control space—TB/ALL.
30.10–20 Deadweight or DWT—TB/ALL.
30.10–37 Keel laying date—TB/ALL.
30.10–38 Lightweight—TB/ALL.
30.10–42 Machinery space—TB/ALL.
30.10–48 Oil fuel—TB/ALL.
30.10–48a Oil fuel unit—TB/ALL.
30.10–62a Service spaces—TB/ALL.

AUTHORITY: 46 U.S.C. 375, 391a, 416; 49 U.S.C. 1655(b); 49 CFR 1.46(b), E.O. 11239 (30 FR 9671).

Subpart 30.10—Definitions

§ 30.10–2 Accommodation space—TB/ALL.

The term "accommodation space" means any public space such as a hall, dining room, mess room, lounge, corridor, lavatory, cabin, office, hospital, cinema, game and hobby room, pantry that contains no cooking appliances, and a similar space open to the passengers and crew.

§ 30.10–5a Cargo area—TB/ALL.

The term "cargo area" means that part of a vessel that includes the cargo tanks and other tanks into which cargo or cargo vapors are intentionally introduced, holds containing these tanks, all intervening space within, between, below, or outboard of these tanks or holds, and the deck area over the length and beam of the vessel above these tanks, holds, or spaces.

§ 30.10–5b Cargo control station—TB/ALL.

The term "cargo control station" means a location that is manned during cargo transfer operations for the purpose of directing or controlling the loading or unloading of cargo.

§ 30.10–6a Category A machinery space—TB/ALL.

The term "Category A machinery space" means any space and trunks and ducts to such a space that contains—

(a) Internal combustion machinery used for main propulsion;

(b) Internal combustion machinery used for purposes other than main propulsion where the total aggregate power

is at least 500 brake horsepower;

(c) internal combustion machinery that uses a fuel that has a flash point of less than 43.3°C (110°F); or

(d) one or more oil fired boilers or oil fuel units.

§ 30.10–14 Combination carrier—TB/ALL.

The term "combination carrier" means a tank vessel designed to carry alternatively liquid and solid cargoes in bulk.

§ 30.10–19a Control space—TB/ALL.

The term "control space" means an enclosed space in which is located a ship's radio, main navigating equipment, or emergency source of power or in which is located centralized fire recording or fire control equipment, but not including firefighting apparatus that must be located in the cargo area or individual pieces of firefighting equipment.

§ 30.10–20 Deadweight or DWT—TB/ALL.

The term "deadweight" or "DWT" means the difference in metric tons between the lightweight displacement and the total displacement of a vessel measured in water of specific gravity 1.025 at the load waterline corresponding to the summer freeboard assigned according to 46 CFR, Subchapter E.

§ 30.10–37 Keel laying date—TB/ALL.

The term "keel laying date" means the date upon which progressive construction identifiable with a specific vessel begins, including construction of the first module or prefabricated section of the hull that is identifiable with that vessel.

§ 30.10–38 Lightweight—TB/ALL.

The term "lightweight" means the displacement of a vessel in metric tons without cargo, oil fuel, lubricating oil, ballast water, fresh water, feedwater in tanks, consumable stores, and persons and their effects.

§ 30.10–42 Machinery space—TB/ALL.

The term "machinery space" means any space that contains machinery and related equipment including Category A machinery spaces, propelling machinery, boilers, oil fuel units, steam and internal combustion engines, generators and centralized electrical machinery, oil filling stations, refrigeration, stabilizing, ventilation, and air conditioning machinery, and similar spaces and trunks to such spaces.

§ 30.10–48 Oil fuel—TB/ALL.

The term "oil fuel" means oil used as fuel for machinery in the vessel in which it is carried.

§ 30.10–48a Oil fuel unit—TB/ALL.

The term "oil fuel unit" means the equipment used for the preparation of oil fuel for delivery to an oil fired boiler, the equipment used for the preparation of heated oil fuel for delivery to an internal combustion engine, and any oil fuel pressure pump, filter, and heater that deals with oil at a pressure of more than 1.8 kilograms per square centimeter (25 p.s.i.) gauge.

§ 30.10–62a Service spaces—TB/ALL.

Service spaces are spaces that are used for galleys, pantries containing cooking appliances, lockers, storerooms, paint and lamp rooms and similar spaces that contain highly combustible materials, laundries, garbage and trash disposal and stowage rooms, workshops other than those forming part of the machinery spaces, and similar spaces and trunks to such spaces.

PART 32—SPECIAL EQUIPMENT, MACHINERY AND HULL REQUIREMENTS

2. Part 32 is amended by adding a new Subpart 32.53 to read as follows:

Subpart 32.53—Inert Gas System

Sec.

32.53–1 Application—T/ALL.
32.53–5 Operation—T/ALL.
32.53–10 General—T/ALL.
32.53–15 Approval—T/ALL.
32.53–20 Inert gas generators—T/ALL.
32.53–25 Gas supply—T/ALL.
32.53–30 Positive pressure—T/ALL.
32.53–35 Gas scrubber—T/ALL.
32.53–40 Scrubber: cooling water supply—T/ALL.
32.53–45 Blowers—T/ALL.
32.53–50 Gas distribution lines: non-return devices—T/ALL.
32.53–55 Stop valves—T/ALL.
32.53–60 Instrumentation—T/ALL.
32.53–65 Portable instruments—T/ALL.
32.53–70 Alarms and controls—T/ALL.
32.53–75 Gas main: Automatic shut-down valve—T/ALL.
32.53–80 Tank cleaning—T/ALL.
32.53–85 Instruction manual—T/ALL.

AUTHORITY: 46 U.S.C. 375, 391a, 416; 49 U.S.C. 1655(b); 49 CFR 1.46(b), E.O. 11239 (30 FR 9671).

Subpart 32.53—Inert Gas System

§ 32.53–1 Application—T/ALL.

The provisions in this subpart apply to each tankship of 100,000 or more DWT (metric) and each combination carrier of 50,000 or more DWT (metric) that have a keel laying date on or after January 1, 1975, except if they—

(a) Carry Grade E cargo that is at a temperature that is lower than 5°C (9°F) below its flashpoint; or

(b) Carry only liquefied gas cargo.

§ 32.53–5 Operation—T/ALL.

The master of each tankship to which this subpart applies shall ensure that the inert gas system is operated as necessary to maintain an inert atmosphere in the cargo tanks at the pressure required under § 32.53–30, except when the cargo tanks are gas free.

§ 32.53–10 General—T/ALL.

(a) Each tankship to which this subpart applies must have an inert gas system that meets the requirements of this subpart and is approved in accordance with 46 CFR 50.20.

(b) Each inert gas system must be designed to supply the cargo tanks a gas or a mixture of gases that has an oxygen content of 5% or less by volume.

(c) Each inert gas system must be designed to eliminate the need for fresh air in the cargo tanks during normal operations except during gas freeing.

(d) Each cargo and cargo slop tank must be capable of being purged with inert gas.

(e) Each inert gas system that is designed to purge the tanks with fresh air must have blank flanges for installation on all fresh air inlets when they are not in use.

(f) Each inert gas system must be designed to minimize the risk of ignition from the generation of static electricity.

§ 32.53–15 Approval—T/ALL.

(a) The installer of each inert gas system must submit a description and specifications of the supply and distribution systems, including all control and monitoring devices, to the appropriate Coast Guard technical office in accordance with 46 CFR 50.20 for approval.

(b) Each inert gas system must meet the requirements of 46 CFR Part 56, except—

(1) The 50 p.s.i. minimum design pressure does not apply, but valves, fittings, and vessels such as scrubbers must be designed for the maximum pressure and temperature they may encounter in service; and

(2) The only initial service test the system is required to pass is an initial service leak test.

§ 32.53–20 Inert gas generators—T/ALL.

Systems employing inert gas generators must meet the requirements of 46 CFR 63.05–20 for control of the generator. Plans for each enert gas generator must be submitted for approval in accordance with 46 CFR 63.05–5.

§ 32.53–25 Gas supply—T/ALL.

Each inert gas system must be capable of supplying inert gas at a capacity of 125 percent of the combined maximum rated capacities of all cargo pumps which can be simultaneously operated.

§ 32.53–30 Positive pressure—T/ALL.

Each inert gas system must be designed to enable the operator to maintain a gas pressure of 100 millimeters (4 inches) of water on filled cargo tanks and during loading and unloading of cargo tanks.

§ 32.53–35 Gas scrubber—T/ALL.

If the inert gas production process uses heated gas or introduces contaminants into the system, the system must have a scrubber or other device that reduces solid and sulphur combustion products and cools the inert gas.

§ 32.53–40 Scrubber: cooling water supply—T/ALL.

(a) The cooling water system of each inert gas system that uses a scrubber must furnish an adequate supply of water to each scrubber without interfering with the water supply to the firefighting system.

(b) An alternate water supply must be available to each scrubber.

§ 32.53–45 Blowers—T/ALL.

(a) Each inert gas system must have at least two independent blowers that together are capable of delivering the amount of gas required by § 32.53–25 of this subpart.

(b) Each inert gas system must be designed to prevent the pressure exerted on the tanks from exceeding their maximum design pressure.

§ 32.53–50 Gas distribution lines: non-return devices—T/ALL.

(a) Two non-return devices, one of which is a water seal, must be fitted in the inert gas main.

(b) The water supply system must be designed to ensure that an adequate supply of water to the water seal can be maintained manually or automatically at all times.

§ 32.53–55 Stop valves—T/ALL.

(a) Stop valves or other means of closure such as spectacle flanges must be fitted in each branch pipe at each tank.

(b) Each stop valve or other device must be a type that provides visible indication of whether it is open or closed.

§ 32.53–60 Instrumentation—T/ALL.

(a) Each inert gas system must be equipped with the following instruments with sensors fitted downstream of the blowers:

(1) Oxygen concentration indicator and permanent recorder.

(2) Pressure indicator and permanent recorder.

(3) Temperature indicator.

(b) Each instrument listed in paragraph (a) of this section must operate continuously when inert gas is being supplied to the tanks.

(c) Each inert gas system must have readouts of oxygen concentration, pressure, and temperature provided at the cargo control station and the location of the person in charge of the main propulsion machinery.

§ 32.53–65 Portable instruments—T/ALL.

(a) Each ship that has an inert gas system must have portable instruments for measuring concentrations of oxygen and hydrocarbon vapor in an inert atmosphere.

(b) Each tank must have fittings which allow the use of portable instruments.

§ 32.53–70 Alarms and controls—T/ALL.

(a) Alarms must sound at the location of the controls for the main propulsion machinery.

(b) Each inert gas system must have the following:

(1) An alarm that gives an audible and visual warning when the oxygen content of the inert gas exceeds 8 percent by volume.

(2) An alarm that gives an audible and visual warning when the gas pressure in the inert gas main downstream of all non-return devices is less than 100 millimeters (4 inches) of water.

(3) An alarm that gives an audible and visual warning and a control that automatically shuts off the system's blowers upon loss of normal water supply at the water seal.

(4) An alarm that gives an audible and visual warning and a control that automatically shuts off the system's blowers when the temperature of the inert gas that is being delivered to the cargo tanks is more than 65.6°C (150°F).

(5) An alarm that gives an audible and visual warning and a control that automatically shuts off the system's blowers upon loss of normal cooling water supply to any scrubber.

§ 32.53–75 Gas main: Automatic shut-down valve—T/ALL.

(a) The gas main of each inert gas system must have an automatic shut-down valve that is fitted where the gas main leaves the production plant.

(b) Each shut-down valve must be designed to close automatically upon blower failure.

§ 32.53–80 Tank cleaning—T/ALL.

Each inert gas system must be capable of maintaining an inert atmosphere within tanks that are being mechanically washed.

§ 32.53–85 Instruction manual—T/ALL.

The master of each ship that has an inert gas system must have on board the ship an instruction manual that contains instructions for the safe operation and maintenance of the inert gas system.

Subpart 32.55—Ventilation and Venting

§ 32.55–40 [Reserved]

3. Subpart 32.55 is amended by revoking and reserving § 32.55–40.

4. Subpart 32.55 is amended by adding a new § 32.55–50 to read as follows:

§ 32.55–50 Ventilation of tankships that have a keel laying date on or after January 1, 1975—T/ALL.

Each tankship that has a keel laying date on or after January 1, 1975, must have deckhouse and superstructure ventilation inlets and outlets and other openings to the exterior arranged to minimize the admission of flammable gas to enclosed spaces that contain a source of ignition.

5. Part 32 is amended by adding a new Subpart 32.56 to read as follows:

Subpart 32.56—Structural Fire Protection for Tank Ships With a Keel Laying Date on or After January 1, 1975

32.56–1 Application—T/ALL.
32.56–5 General—T/ALL.
32.56–10 Navigation position I—T/ALL.
32.56–15 Deck spills—T/ALL.
32.56–20 Insulation of exterior boundaries: Superstructures and deckhouses—T/ALL.
32.56–21 Openings in exterior boundaries: Accommodation, service, and control spaces—T/ALL.
32.56–22 Openings in and insulation of boundaries: other spaces—T/ALL.
32.56–25 Category A machinery spaces: Windows and port lights—T/ALL.
32.56–30 Category A machinery spaces: Bulkheads and decks—T/ALL.
32.56–35 Doors—T/ALL.
32.56–40 Category A machinery spaces: Insultation—T/ALL.
32.56–45 Draft stops—T/ALL.
32.56–50 Combustible veneers—T/ALL.
32.56–55 Control spaces—T/ALL.
32.56–60 Ventilation ducts—T/ALL.

AUTHORITY: 46 U.S.C. 375,391a, 416; 49 U.S.C. 1655(b); 49 CFR 1.46(b), E.O. 11239 (30 FR 9671).

Subpart 32.56—Structural Fire Protection for Tank Ships With a Keel Laying Date on or After January 1, 1975

§ 32.56–1 Application—T/ALL.

This subpart applies to all tankships that have a keel laying date on or after January 1, 1975.

§ 32.56–5 General—T/ALL.

(a) Except as provided in paragraphs (c) and (d) of this section, each Category A machinery space must be aft of the cargo area and pumprooms.

(b) Except as provided in paragraphs (c), (d), and (e) of this section, each accommodation space, service space except isolated storage spaces, and control space and each main cargo control station must be aft of—

(1) The cargo area;

(2) All cargo pumprooms; and

(3) All cofferdams that isolate the cargo area from Category A machinery spaces.

(c) Except as provided in paragraph (e) of this section, any pumproom may be recessed below accommodation, service, and control spaces and recessed into any Category A machinery space if the distance between the deckhead of the recess and the underside of the accommodation, service, or control space is at least equal to the height of the recess.

(d) Accommodation, service, control and certain machinery spaces, such as spaces for bow thrusters, windlass, and emergency fire pumps, may be located forward of the cargo area and pump rooms if it is demonstrated to the Commandant that the overall degree of safety of the vessel is improved and that the degree of fire and life safety for these spaces is not less than the degree of fire and life safety for similar spaces located aft.

(e) On liquefied gas carriers—

(1) Main cargo control stations may be located in the cargo area;

(2) Accommodation, service, and control spaces may be located over cofferdams that isolate cargo tanks other than integral tanks from Category A machinery spaces;

(3) Pumprooms may not be recessed into any space below deck.

§ 32.56–10 Navigation positions—T/ALL.

(a) No navigation position may be above the cargo area unless it is approved by the Commandant as necessary for the safe operation of the vessel.

(b) Each navigation position that is above the cargo area must be separated from the deck by an unenclosed space that extends at least 2 meters (6.6 feet) from the deck to the navigation position.

(c) Openings to navigation positions above cargo areas, except air locks, must be at least 2.4 meters (7.9 feet) above the deck.

§ 32.56–15 Deck spills—T/ALL.

A coaming or other barrier at least .3 meters (1 foot) higher than adjacent spill containment barrier must be provided to prevent cargo spills from flowing aft of the housefront.

§ 32.56–20 Insulation of exterior boundaries: Superstructures and deckhouses—T/ALL.

The following exterior boundaries of superstructures and deckhouses that contain accommodation, service, and control spaces, except wheelhouses, must be insulated to "A–60" Class:

(a) The exterior boundaries that face the cargo area.

(b) The portion of the exterior bulkheads and decks within 3 meters (10 feet) of these boundaries.

§ 32.56–21 Openings in exterior boundaries: Accommodation, service, and control spaces—T/ALL.

The following exterior boundaries of accommodation, service, and control spaces, except wheelhouses, must have no openings, and portlights must be of a fixed type with easily operable steel covers on the inside:

(a) The exterior boundaries that face the cargo area.

(b) The portion of the exterior boundaries within 3 meters (10 feet) or the length of the vessel divided by 25, whichever is greater, except that the distance need not exceed 5 meters (16.4 feet), of these boundaries.

§ 32.56–22 Openings in and insulation of boundaries: Other spaces—T/ALL.

If openings are fitted into the following exterior boundaries of any space other than an accommodation, service, or control space, the interior of the space must be insulated to "A–60" Class and the space must not provide access to any accommodation, service, or control space:

(a) The exterior boundaries that face the cargo area.

(b) The portion of the exterior boundaries within 3 meters (10 feet) or the length of the vessel divided by 25, whichever is greater, except that the distance need not exceed 5 meters (16.4 feet), of these boundaries.

§ 32.56–25 Category A machinery spaces: Windows and port lights—T/ALL.

(a) Except as provided in paragraph (b) of this section and 46 CFR 111.85–10, boundaries of Category A machinery spaces and boundaries of cargo pumprooms must not be pierced for windows or portlights.

(b) Skylights that can be closed from outside the spaces they serve may be fitted in boundaries of Category A machinery spaces.

§ 32.56–30 Category A machinery spaces: Bulkheads and decks—T/ALL.

(a) Bulkheads and decks that separate Category A machinery spaces from cargo pumprooms must be "A" Class construction.

(b) Bulkheads and decks that separate Category A machinery spaces or cargo pumprooms, including the pumproom entrance, from accommodation, service, or control spaces must be "A–60" Class construction.

§ 32.56–35 Doors—T/ALL.

(a) Casing doors in Category A machinery spaces and all elevator doors must be self-closing and must meet the requirements of 46 CFR 72.05–25(b).

(b) If a means of holding a door open is used, it must be a magnetic holdback or equivalent device that is operated from the bridge or other suitable remote control position.

§ 32.56–40 Category A machinery spaces: Insulation—H/ALL.

Structural insulation within Category A machinery spaces must have a barrier such as metal foil, sheet metal, cementitious coating, or other vapor barrier so that the surface of that insulation is impervious to all and oil vapors.

§ 32.56–45 Draft stops—T/ALL.

(a) Where ceilings or linings are fitted in accommodation, service, or control spaces, "B" Class bulkheads, except those that form passageways, may stop at the ceiling or lining if draft stops of "B" Class construction are fitted between the ceiling or lining and the deck or shell at intervals of 14 meters (45 feet) or less.

(b) Spaces behind the linings of stairways and other trunks must have draft stops at each deck.

§ 32.56–50 Combustible veneers—T/ALL.

(a) Except as provided in paragraph (b) of this section combustible veneers on bulkheads, linings, and ceilings within accommodation, service, or control spaces must be 2 millimeters (.079 inches) or less in thickness.

(b) Veneers on bulkheads, linings, and ceilings in concealed spaces, corridors, stairway enclosures, or control spaces must be an approved interior finish material or a reasonable number of coats of paint.

§ 32.56–55 Control spaces—T/ALL.

Bulkheads and decks that separate control spaces from adjacent spaces must be "A" Class construction and insulated against fire. 46 CFR Table 72.05–10(e) of the Passenger Vessel Regulations may be used as a guide.

§ 32.56–60 Ventilation ducts—T/ALL.

(a) Each duct for ventilation of Category A machinery spaces that passes through accommodation, service, or control spaces must be—

(1) Constructed of steel and insulated to "A–60" Class; or

(2) constructed of steel, fitted with an automatic fire damper at each boundary where it enters and leaves the Category A machinery space, and insulated to "A–60" Class for a distance of 5 meters (16.4 feet) beyond each machinery space boundary.

(b) Each duct for ventilation of accommodation, service, and control spaces that passes through Category A machinery spaces must be constructed of steel and be fitted with an automatic fire damper at each Category A machinery space boundary.

Subpart 32.57—Structural Fire Protection for Tank Vessels Contracted for on and after January 1, 1963

6. Section 32.57–5 is amended by revising paragraph (b) to read as follows:

§ 32.57–5 Definitions—TB/ALL.

* * * * *

(b) *"A" Class divisions.* "A" Class divisions such as bulkheads and decks, means divisions that are composed of steel or an equivalent metal, suitably stiffened, and made intact with the main structure of the vessel, including the shell, structural bulkheads, or decks. They are constructed so that, if subjected to the standard fire test, they are capable of preventing the passage of flame and smoke for one hour. In addition, they are insulated with approved structural insulation, bulkhead panels, or deck coverings so that the average temperature on the unexposed side does not rise more than 139° C (250°F) above the original temperature, nor does the temperature at any one point, including any joint, rise more than 181° C (325°F) above the original temperature, within the time listed below:

Class A–60	60 minutes
Class A–30	30 minutes
Class A–15	15 minutes
Class A–0	0 minutes with no insulation requirement

* * * * *

7. Section 32.57–10 is amended by revising the introductory clause of paragraph (d) to read as follows:

§ 32.57–10 Construction—TB/ALL.

* * * * *

(d) The following conditions apply within accommodation, service, and control spaces: * * *

8. Section 32.57–10 is further amended by revising paragraph (d)(7) and by adding a new paragraph (d)(7a) to read as follows:

§ 32.57–10 Construction—TB/ALL.

* * * * *

(d) * * *

(7) Except as provided in subparagraph (d)(7a) of this paragraph, ceilings, linings, and insulation, including pipe and duct laggings, must be made of approved incombustible material.

(7a) Combustible insulations and vapor barriers that have a maximum extent of burning of 122 millimeters (5 inches) or less when tested in accordance with American Society for Testing and Materials (ASTM) Specification D–1692, "Rate of Burning or Extent of Burning of Cellular Plastics Using a Supported Specimen by a Horizontal Screen", may be used within refrigerated compartments.

9. Section 32.57–10 is further amended by deleting the words "$\frac{2}{28}$ of an inch"

in paragraph (d)(9) and substituting the words "2 millimeters (.079 inch)" in place thereof.

PART 34—FIREFIGHTING EQUIPMENT

Subpart 34.20—Deck Foam System, Details

10. Section 34.20–1 is amended by revising paragraph (a) to read as follows:

§ 34.20–1 Application—T/ALL.

(a) Where a deck foam system is installed, the provisions of this subpart, except § 34.20–90, apply to all installations that are contracted for on or after January 1, 1970, unless otherwise indicated.

* * * * *

11. Section 34.20–5 is amended by revising paragraph (c) to read as follows:

§ 34.20–5 Quantity of foam required—T/ALL.

* * * * *

(c) *Supply of foam-producing material.* Each deck foam system must have a supply of foam-producing material sufficient to operate the system at its designed rate of foam production for the following periods:

(1) For installations contracted for on or after January 1, 1970, 15 minutes without recharging, except as required in subparagraph (c)(2) of this section.

(2) For installations on ships that have a keel laying date on or after January 1, 1975, 20 minutes without recharging.

12. Section 34.20–10 is amended by adding a new paragraph (e) to read as follows:

§ 34.20–10 Controls—T/ALL.

* * * * *

(e) The deck foam system on each tankship that has a keel laying date on or after January 1, 1975, must be capable of being actuated, including introduction of foam to the foam main, within three minutes of notification of a fire.

13. Section 34.20–15 is amended by adding a new paragraph (g) to read as follows:

§ 34.20–15 Piping—T/ALL.

* * * * *

(g) Tankships of 100,000 or more DWT (metric) and combination carriers of 50,000 or more DWT (metric) that have a keel laying date on or after January 1, 1975, must have at least one foam station port and at least one foam station starboard that are separated from each other by a distance equal to at least one-half the beam of the vessel—

(1) At the housefront or aft of the cargo area in a location that is accessible to the crew for fighting a cargo and a pumproom fire; and

(2) If the tankship has a forward accommodations house, at the after boundary of that house.

14. Subpart 34.20 is amended by adding a new § 34.20–25 to read as follows:

§ 34.20–25 Foam monitor capacity—T/ALL.

The capacity of each foam monitor on ships that have a keel laying date on or after January 1, 1975, must be at least 3 liters per minute per square meter (.073 gallons per minute per square foot) of cargo area protected by that monitor.

(46 U.S.C. 375, 391a, 416; 49 U.S.C. 1655(b); 49 CFR 1.46(b), E.O. 11239 (30 FR 9671))

Effective date. These amendments become effective on ———

Dated: January 21, 1976.

O. W. SILER,
Admiral, U.S. Coast Guard,
Commandant.

[FR Doc.76–2208 Filed 1–23–76;8:45 am]

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